

# Notice of Allowability

Application No.

09/853,076

Examiner

Ayal I Sharon

Applicant(s)

ROSS ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 8/12/2004.
2. ☒ The allowed claim(s) is/are 1 and 3-14.
3. ☒ The drawings filed on 18 December 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

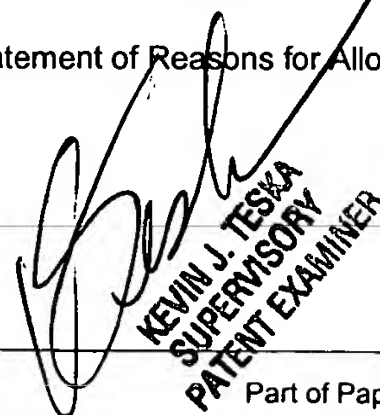
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
KEVIN J. TESKA  
SUPERVISORY  
PATENT EXAMINER

## **DETAILED ACTION**

### ***Introduction***

1. This communication is in response to Applicants' Amendment filed on 8/12/2004.
2. In the Applicants' Amendment, independent claims 1 and 13 were amended to incorporate the limitations of claim 2, which were indicated as containing allowable subject matter in the previous Office Action. Claim 2 was cancelled.
3. In addition, claims 3 and 4 were amended to address dependency issues created by canceling claim 2.
4. Also, claims 8 and 10 were amended to remove the term "substantially", in order to overcome the rejections based on 35 U.S.C. §112. Examiner has therefore withdrawn the rejections.

### ***Claim Interpretations***

5. Examiner interprets "simulating" and "simulant" according to the definition of the term "simulate" in Webster's Revised Unabridged Dictionary, © 1996, 1998

MICRA, Inc., as follows:

To assume the mere appearance of, without the reality; to assume the signs or indications of, falsely; to counterfeit; to feign.

Therefore, the term "simulate" is not restricted to the computer-related arts.

6. Examiner interprets "grain" as corresponding to "propellant". See the cited Nowlicki reference, "2. Solid Propellant Rockets".

***Examiner's Amendment***

7. The following amendments are being made in order to correct typographical errors in the claims. Applicant's Representative, Mr. Fredric Zimmerman, Reg. No. 48,747 approved these amendments in a telephone conversation conducted on 11/19/2004.
8. Amend claim 1, line 5, to remove the letter "t" from the word "stimulant", as follows:  
  
From  
  
    ---- a grain stimulant ----  
  
to  
  
    ---- a grain simulant ----
9. Amend claim 13, lines 5-6, to remove the letter "t" from the word "stimulant", as follows:  
  
From  
  
    ---- providing a device comprising an energetic material assembly  
    comprising a grain stimulant ----  
  
to  
  
    ---- providing a device comprising an energetic material assembly  
    comprising a grain simulant ----

***Reasons for Allowance***

10. The following is an Examiner's statement of reasons for the indication of allowable subject matter. The closest prior art of record is:

- a. Hodges, Peter. U.K. Patent Application GB 2,187,267. Published: Sept. 3, 1987. (Henceforth referred to as "**Hodges**").
- b. Rosenfield, Gary. U.S. Patent 5,579,636. Date of Patent: Dec. 3, 1996. (Henceforth referred to as "**Rosenfield**").
- c. Vottis et al. U.S. Patent 5,624,189. Date of Patent: Apr. 29, 1997. (Henceforth referred to as "**Vottis**").

11. Applicants' first set of claims consists of claims 1-12.

Independent claim 1 is directed at a temperature simulating device for simulating the energetic material temperature within ordnance wherein the energetic material has thermal properties and a cross-sectional area and the ordnance has housing.

This claim identifies the distinct features of "a grain stimulant, comprising a rubber material, having thermal properties, being inert, wherein the thermal properties of the grain stimulant approximate the thermal properties of the energetic material."

Hodges teaches the use of an "... explosively inert material 22, such as sand, which has a thermal conductivity and thermal mass substantially equal to, or at least of the same order of magnitude as, that of a real propellant charge"

inside an ammunition case in order to estimate a gun propellant charge temperature. (See p.2, line 129 to p.3, line 4).

However, while Hodges teaches the use of “explosively inert material”, Hodges only provides the example of sand. Hodges does not expressly teach the use of rubber (nor the more specific “hydrin rubber” claimed in claim 3, or the “polystyrene foam” claimed in claim 9), as an explosively inert grain stimulant.

Rosenfield, on the other hand, expressly teaches the use of rubber as a “relatively inert material” component in actual solid fuel grain (See col.7, lines 47-57). However, Rosenfield does not expressly or implicitly teach the use of rubber alone, as a “grain simulant”.

Vottis expressly teaches a temperature emulating system for determining the temperature of gun ammunition propellant, however, the temperature is indirectly approximated by measuring the wall of a chamber in which live ammunition is stored. (See Abstract). Vottis does not expressly or implicitly teach the use of any grain simulant, much less the use of rubber as a grain simulant.

12. Applicants' second set of claims consists of claims 13-14.

Independent claim 13 is directed at a method of simulating the temperature of the energetic material temperature within ordnance wherein the energetic material has thermal properties and a cross-sectional area and the ordnance has housing.

This claim identifies the distinct features of “providing a device comprising an energetic material assembly comprising a grain stimulant, comprising a rubber

material, having thermal properties, being inert, wherein the thermal properties of the grain simulant approximate the thermal properties of the energetic material.”

Hodges teaches the use of an “... explosively inert material 22, such as sand, which has a thermal conductivity and thermal mass substantially equal to, or at least of the same order of magnitude as, that of a real propellant charge” inside an ammunition case in order to estimate a gun propellant charge temperature. (See p.2, line 129 to p.3, line 4).

However, while Hodges teaches the use of “explosively inert material”, Hodges only provides the example of sand. Hodges does not expressly teach the use of rubber (nor the more specific “hydrin rubber” claimed in claim 3, or the “polystyrene foam” claimed in claim 9), as an explosively inert grain stimulant.

Rosenfield, on the other hand, expressly teaches the use of rubber as a “relatively inert material” component in actual solid fuel grain (See col.7, lines 47-57). However, Rosenfield does not expressly or implicitly teach the use of rubber alone, as a “grain simulant”.

Vottis expressly teaches a temperature emulating system for determining the temperature of gun ammunition propellant, however, the temperature is indirectly approximated by measuring the wall of a chamber in which live ammunition is stored. (See Abstract). Vottis does not expressly or implicitly teach the use of any grain simulant, much less the use of rubber as a grain simulant.

Applicants' responded in the amendment filed 5/6/2004 (see p.6) that "... the binder would be in a liquid or gel state (basically not useable for the present invention)".

13. Therefore, neither Hodges, nor Rosenfield, nor Vottis, either alone or in combination, teach the limitation of a grain simulant comprising a rubber material in combination with the other limitations of the independent claims. Therefore, Examiner finds these independent claims, and all their dependent claims, to be allowable over the cited prior art.
14. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks

Art Unit: 2123

Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4<sup>th</sup> floor receptionist's office  
Crystal Park 2  
2121 Crystal Drive  
Arlington, VA 22202

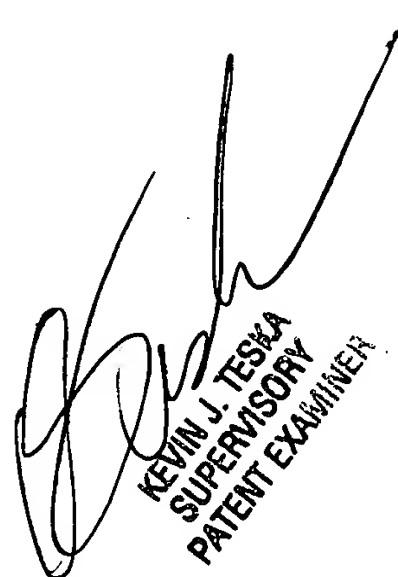
Fax: (703) 872-9306

Any inquiry of a general nature or relating to the status of this application  
or proceeding should be directed to the receptionist, whose telephone number is:  
(703) 305-3900.

Ayal I. Sharon

Art Unit 2123

November 19, 2004



KEVIN J. TESKA  
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